

WHAT IS CLAIMED IS:

1. A numerically controlled reciprocating submersible pump apparatus, comprising a balancing sieve tube, a drive and a pump, characterized in that the whole apparatus is placed in underground oil reservoirs; The drive consists of a stator with an airtight cavity and a reciprocating head with iron cores inside the stator; The stator and the reciprocating head form a friction couple via the supporting guides and the reciprocating head iron cores; The stator's upper end is connected to the pump's lower end through the sieve tube; The pump is connected to the oil tube; The stator's lower end is connected to the balancing sieve tube, the end plug and the end coupler serially.
2. The numerically controlled reciprocating submersible pump apparatus, according to claim 1, characterized in that there are many circular iron core winding groups inside the stator frame with supporting guides between the winding groups; The iron cores and the circular windings are arranged next to each other, There are seal bushings on the circular inside surfaces; The seal bushings are connected to the endcovers; All these form the airtight cavity.
3. The numerically controlled reciprocating submersible pump apparatus, according to claim 2, characterized in that the stator's radially wound windings are arranged axially.
4. The numerically controlled reciprocating submersible pump apparatus, according to claim 2, characterized in that the supporting guides are made from alloy; The circular inside surfaces are made from alloy; The supporting guides have smaller inside diameters than the seal bushings.
5. The numerically controlled reciprocating submersible pump apparatus, according to claim 1, characterized in that the reciprocating head's iron cores are around the reciprocating head's solid shaft with permanent magnets between the iron cores; The circular iron cores' outside surfaces are made from alloy and they form a friction couple with the supporting guides via the alloy layers on the inside surfaces of the supporting guides.
6. The numerically controlled reciprocating submersible pump apparatus, according to claim 5, characterized in that the permanent magnets are equally spaced between the reciprocating head's iron cores; The magnets have smaller outside diameters than the circular iron cores.
7. The numerically controlled reciprocating submersible pump apparatus, according to claim 1, characterized in that there is a pump housing outside the pump cylinder, forming a circular space between them for sand residue; The plunger push rod is connected to the reciprocating head shaft's upper end through the sieve tube.
8. The numerically controlled reciprocating submersible pump apparatus, according to

claim 1, characterized in that the oil tube leads to the ground surface; Windings' terminal from the stator is connected to the overground numerical control unit.